

## ABSTRACT

An odor removal system to neutralize odors and VOC emissions released into the environment by commercial and/or industrial air streams utilizes Non-Thermal Plasma (NTP) to create a range of Reactive Oxygen Species (ROS) to cause the oxidation and/or reduction of odor causing molecules and VOC's. The ROS is generated by drawing atmospheric and/or odorous air through a Dielectric Barrier Discharge Plasma Generation Cell (DBDPGC). The gas is activated by passing it through the non-thermal plasma field in the DBDPGC, producing the ROS that are then immediately mixed into the odorous gas stream to be treated, or if it is the odorous gas that is passing through the NTP field, it is inherently mixed. When large volumes of gas, and/or extremely high odor load in combination with large gas volumes must be treated, multiple units can be combined in parallel to treat the gas. The DBDPGC has hermetically sealed hot electrodes and may be used in other applications.